

CONTRIBUTIONS TO THE TAXONOMY OF *STIGMODERA* (*CASTIARINA*) (COLEOPTERA: BUPRESTIDAE)

by S. BARKER*

Summary

BARKER, S. (1988) Contributions to the taxonomy of *Stigmodera* (*Castiarina*) (Coleoptera: BUPRESTIDAE). *Trans. R. Soc. S. Aust.* **112**, 133-142, 30 November, 1988.

Three new synonyms of *Stigmodera* (*Castiarina*) are recognised (valid name is given last): *acuta* Deuquet = *delicatula* Kerremans; *triparvita* Kerremans = *deserti* Blackburn = *atricollis* Saunders. *S. mimus* Saunders is resurrected from synonymy. Ten new species of *Stigmodera* (*Castiarina*) are described: *S. ashburtonensis* sp. nov., *S. deliciosa* sp. nov., *S. distantia* sp. nov., *S. macquillani* sp. nov., *S. mayoiana* sp. nov.; *S. munghisonensis* sp. nov., *S. sedlaceki* sp. nov., *S. lepperi* sp. nov., *S. watkinsi* sp. nov. and *S. williamsi* sp. nov.

KEY WORDS: New species, *Stigmodera* (*Castiarina*), Coleoptera, BUPRESTIDAE

Introduction

New species of *Stigmodera* (*Castiarina*) have been collected recently by some very active collaborators. In particular, the innovative use of a mechanical cherry-picker in the Gosford district of N.S.W. over a flowering lilly-pilly (*Acmena* sp.), produced two new species in the *S. producta* Saunders mimicry complex. Although *Stigmodera* (*Castiarina*) species occur in New Guinea, few collections have been made there. A small collection made by Mr J. Sedlacek resulted in a further species being added to the New Guinea fauna. Ten new species are described here and other species are resurrected or placed in synonymy.

Materials and Methods

Male genitalia were prepared and displayed by the method described by Barker (1987). Abbreviations used in the text for museum and private collections following Watt (1979) are: AMSA Australian Museum, Sydney; ANIC Australian National Insect Collection, C.S.I.R.O., Canberra; BMNH British Museum (Natural History), London; Muséum Nationale d'Histoire Naturelle, Paris; NMVA National Museums of Victoria, Melbourne; QMBA Queensland Museum, Brisbane; SAMA South Australian Museum, Adelaide; TADA Department of Agriculture, Hobart; WADA Department of Agriculture, South Perth; AHQA Mr A. Hiller, Mt Glorious; GBVA Mr G. G. Burns, Mornington; MHSA Mr T. M. S. Hanlon, Ryde; RMNA Mr R. Mayo, Narara; MPWA Mr M. Powell, Attadale; ASSA Mr A. Sundholm, Elizabeth Bay; SWNA Mr S. Watkins, Caparra; GWNA Mr G. Williams, Lansdowne.

Species resurrected from synonymy

Barker (1979, 1986) wrongly followed Kerremans (1903) and Carter (1916) in listing *S. mimus* Saunders (Holotype female, Qld, BMNH) as a synonym of *S. pertyi* C & G (Holotype, Aust., MNHN). I have recently examined series of both collected in N.S.W. *S. mimus* has a red pronotum and fewer dark pronotal markings than *S. pertyi* which has a yellow pronotum. Their male genitalia as shown (Figs 1A, 1B) are quite distinct. I consider each a valid species.

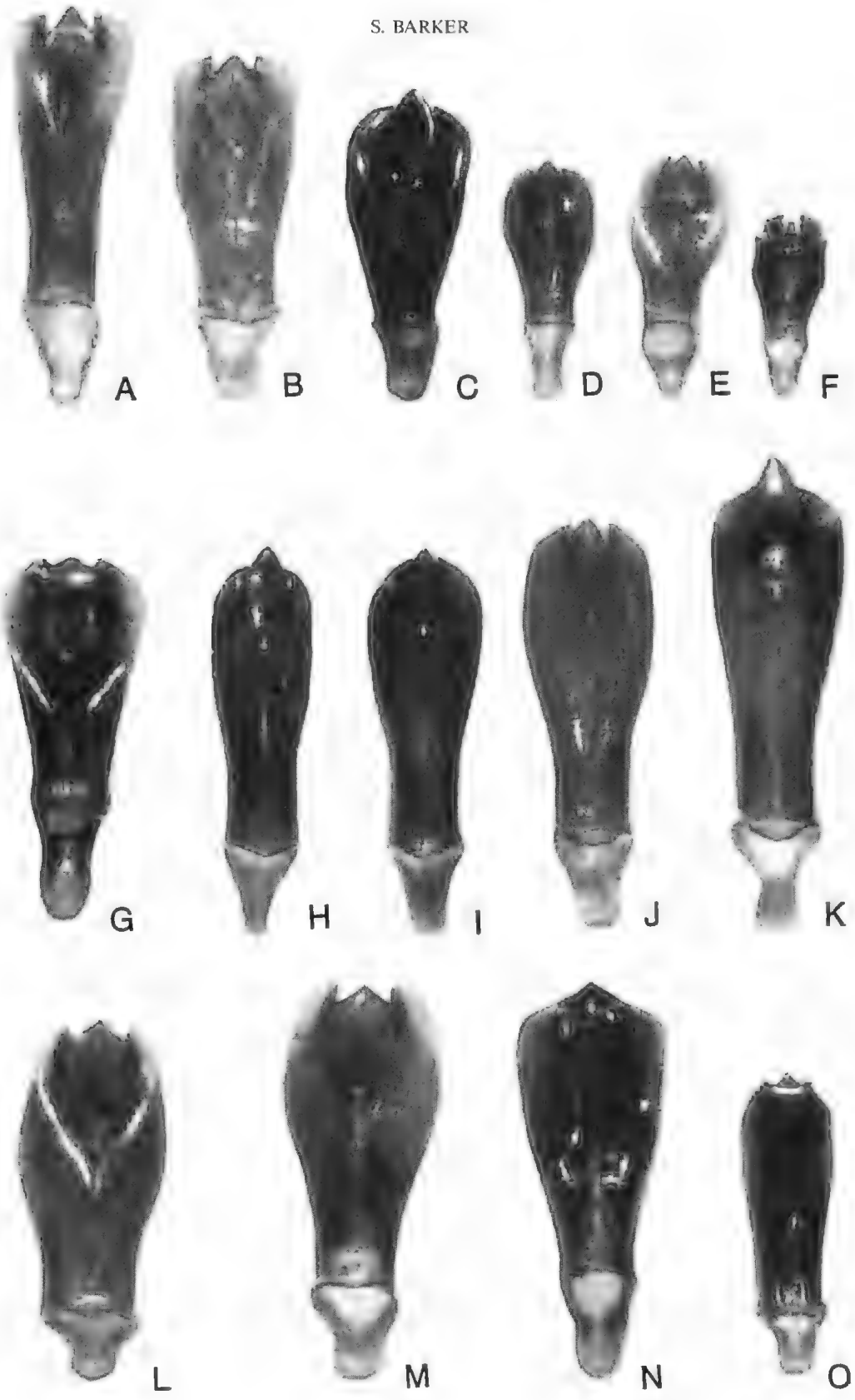
New synonyms in *Stigmodera* (*Castiarina*)

Barker (1983) listed *S. acuta* Deuquet, 1956 (Holotype male, Acacia Plateau, N.S.W., *Harold Davidson*, AMSA) as a synonym of *S. delicatula* Kerremans, 1903 (Holotype female, N.S.W., *Standing*, BMNH) and described *S. pseudasilida*, designating the female paratype of *S. acuta* as a paratype. Barker (1986) resurrected *S. acuta* from synonymy and pointed out that the illustration of Deuquet (1956, Fig. 1) was not of *S. acuta*, but in reality the female paratype later designated a paratype of *S. pseudasilida*.

A re-examination of the types of *S. spectabilis* Kerremans and *S. delicatula* Kerremans has reconfirmed that *S. acuta* is synonymous with *S. delicatula*. The species is unique in having attenuated elytra with two very small equal spines, the margin rounded between. Deuquet (1956) p. 155 described the male of *S. acuta* as 'very acuminate, minutely lunate, very short narrowly separated spines,' a precise description of *S. delicatula*.

Blackburn (1890) described *S. deserti* as a variety of *S. atricollis* Saunders (Holotype male, S. Aust., BMNH) after examining a short series collected in the Queen Victoria Desert by the Elder expedition. He could find little difference between this species and the typical *S. atricollis*, except that it was much smaller and the fascia and apical marks were heavier

* Department of Zoology, University of Adelaide, G.P.O. Box 498 Adelaide, S. Aust. 5001.



than typical. Barker (1983) elevated *S. deserti* to specific status on the basis of differences between the genitalia of specimens attributed to *S. deserti* from the Murchison and Gascoyne districts, W.A. and those of *S. atricollis* (Figs 1E, 1F). Barker (1986) recognised that the genitalic comparison had not been made with *S. atricollis*, but instead with an undescribed W.A. species: *S. cruenta* Barker. A series of old specimens of *S. atricollis* collected in S. Aust. were examined, and a single recently collected male from the northern Flinders Ranges was dissected and illustrated alongside the genitalia of *S. cruenta* Barker (1986). It appears that the specimens attributed to *S. deserti* were unusually small specimens of *S. atricollis* which is widespread in W.A. and has been redescribed as *S. tripartita* Kerremans (Holotype male, Aust., BMNH). Barker (1979) listed *S. tripartita* Kerremans as a synonym of *S. atricollis* but Barker (1986) listed it as a valid species. The problem with the identification of *S. deserti* has occurred because of my inability to locate the type specimen. I now consider *S. deserti* and *S. tripartita* to be synonyms of *S. atricollis* which is a common and widespread species in arid areas of S. Aust. and W.A. The adults usually are collected on the flowers of *Cassia* sp., occasionally on the flowers of *Melaleuca uncinata* R.Br.

Problems with identification of two species of *Stigmodera* (*Castiarina*) have been caused by misidentification in Carter (1929). Pl. 32, Fig. 25 is labelled *cupricollis* Saunders, but illustrates *S. devrollei* Thomson, whereas Fig. 31 is labelled *coccinata* (Hope) but illustrates *S. atronotata* Waterhouse. A further confusion is that the figures were not reproduced to the same scale. Moore (1987) labelled as *S. cupricollis* Saunders an illustration of *S. devrollei* Thomson (a unifasciate morph, previously known as *S. sancta* Carter before being synonymised by Barker (1986)) and also wrongly identified an illustration of *S. tricolor* (Kirby) as *S. trifasciata* C & G (Pls 7, 8; Fig F).

Stigmodera (Castiarina) ashburtonensis sp. nov.
FIGS 1K, 3B

Holotype, ♂, Ashburton R., Ashburton Downs Stn, W.A., 27.viii.1977, K. T. Richards, ANIC.

Allotype, ♀, same data as holotype ANIC.

Paratypes, W.A.: 1 ♂, 2 ♀ ♀, same data as holotype, WADA, SAMA; 1 ♀, Cue, Ellershaw,

SAMA; 1 ♂, 2 ♀ ♀, Cue, SAMA; 1 ♂, Cue, 27.iii.1899, Ellershaw, WAMA.

Colour, Head, antennae coppery-purple. Pronotum dark purple medially, coppery-purple laterally. Scutellum purple. Elytra orange with following dark blue markings: narrow basal margin; anteromedial spot on each elytron and one on suture; posteromedial fascia, convex anteriorly, reaching margin; anteroapical spot on suture. Ventral surface: sternum coppery-purple; abdomen dark purple. Legs: femora dark purple; tibiae and tarsomeres coppery-purple. Hairs silver.

Shape and sculpture. Head closely punctured, broad median sulcus, very short muzzle, eyes bulbous. Antennae compressed, segments: 1-3 obconic; 4-11 toothed. Pronotum closely punctured; basal fovea extending forwards to middle as glabrous line, basal notches surrounded by glabrous area on each side more marginal than medial; apical margin broadly projecting medially, basal margin barely bisinuate; laterally parallel-sided at base, angled inwards, rounded, widest anteromedially, rounded to apex. Scutellum scutiform, flat, excavate. Elytra punctate-striate, intervals convex, punctured; laterally angled out from base, rounded at humeral callus, concave, rounded posteromedially, narrowed to hispidose apex, both spines minute, rounded and indented between, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, sparse medium length hair. S₇: male truncate; female medially indented, faintly bilobed.

Size. Males, 15.9 × 5.8 mm (4). Females, 18.3 ± 0.26 × 6.8 ± 0.09 mm (6).

Male genitalia. (Fig. 1K). Parameres parallel-sided from base, rounded anteromedially and angled outwards, rounded posteromedially and parallel-sided, rounded apically. Median lobe blunt, sides acutely angled away. Apophysis of basal piece narrowed medially, truncate apically.

Remarks. Member of *S. trifasciata* C & G species group. Closest to *S. insignicollis* Blackburn. That species is smaller, has yellow elytra with a red margin, and the male genitalia (Fig. 1J) have parameres parallel-sided from base, rounded medially then parallel-sided, rounded apically. Median lobe blunt, sides acutely angled away. Apophysis of basal piece medium width, rounded apically. The red

Fig. 1. Photomicrographs of male genitalia of the following *Stigmodera (Castiarina)* species: A. *S. pertyi* C & G, B. *S. minus* Saunders, C. *S. macquillani* sp. nov., D. *S. murchisonensis* sp. nov., E. *S. watkinsi* sp. nov., F. *S. williamsi* sp. nov., G. *S. mayotana* sp. nov., H. *S. cylindracea* Saunders, I. *S. distantia* sp. nov., J. *S. insignicollis* Blackburn, K. *S. ashburtonensis* sp. nov., L. *S. tepperi* sp. nov., M. *S. burnsi* Barker, N. *S. delletosa* sp. nov., O. *S. agdlaecki* sp. nov.

margin fades in old specimens of *S. insignicollis* and they are difficult to distinguish. Ashburton R. specimens were collected on the flowers of *Petalostylis labicheoides* R.Br. The name is derived from the type locality.

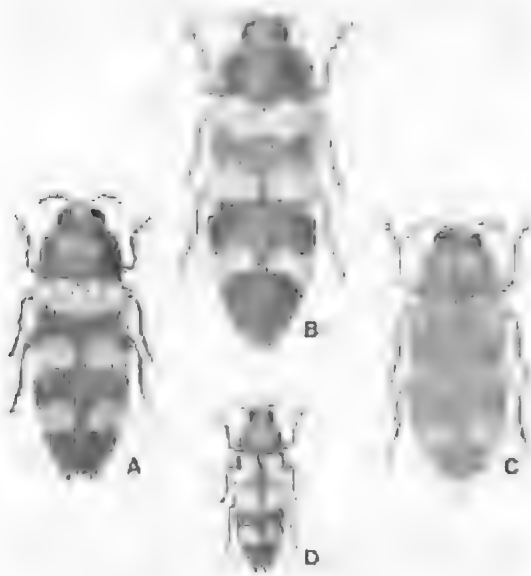


FIG. 2. A. *Stigmodera murchisonensis* sp. nov., B. *S. distantia* sp. nov., C. *S. watkinsi* sp. nov., D. *S. williamsi* sp. nov. (x3)

Stigmodera (Castiarina) distantia sp. nov.
FIGS 11, 2B

Holotype: ♂, 4 km W Zanthus, W.A., 21.x.1986, M. Powell, WAMA.

Allotype: ♀, same data as holotype, SAMA 1 21207.

Paratypes. W.A.: 3 ♀♀, same data as holotype, MPWA.

Colour: Head mostly green, black at base. Antennae green. Pronotum black medially, green laterally. Scutellum black. Elytra yellow with following dark blue markings: narrow basal margin; anteromedial fascia consisting of three connected spots not reaching margin, in allotype three separate spots, one on each elytron and one on suture; posteromedial fascia reaching margin, projecting anteriorly from middle of each elytron; spade-shaped apical mark, last three marks connected along suture, red margin. Ventral surface and legs green. Hairs silver.

Shape and sculpture: Head shallowly punctured, shallow median sulcus, very short muzzle. Antennae compressed, segments: 1-3 obconic; 4-11 toothed. Pronotum shallowly punctured, basal fovea extending forwards to middle as glabrous line, basal notches represented by glabrous area on each side more marginal than medial; apical margin projecting medially, basal margin bisinuate; laterally parallel-sided at base, rounded to widest part medially, rounded to apex. Scutellum scutiform, glabrous, excavate. Elytra punctate-striate, intervals convex, shallowly punctured; laterally angled out from base, rounded at humeral callus, concave, rounded posteromedially and narrowed to bispinose apex; blunt marginal spine, minute sutural spine, margin indented between, apices hardly diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, sparse medium length hairs. S₇: male truncate and slightly indented medially; female bilobed.

Size. Male, 13.5 × 4.8 mm (1). Females, 13.9 × 5.2 mm (4).

Male genitalia: (Fig. 11). Parameres parallel-sided basally, widened anteromedially, rounded apically. Median lobe blunt, sides acutely angled away. Apophysis of basal piece moderately wide, rounded apically.

Remarks: Member of *S. trifasciata* C & G species group. The elytral markings and colouration most resemble *S. cylindracea* Saunders, except that the pronotum in *cylindracea* is all green and the body smaller and cylindrical. The male genitalia of *S. cylindracea* (Fig. 1H) have parameres parallel-sided basally, rounded anteromedially, parallel-sided, rounded apically. Median lobe sharp, sides acutely angled away. Apophysis of basal piece narrowed, rounded apically. All specimens were collected on the flowers of *Melaleuca uncinata* R.Br. The name is derived from *distantia* L. "remoteness".

Stigmodera (Castiarina) macquillani sp. nov.
FIGS 1C, 3A

Holotype. ♂, Mt Algonkian 1073 m, Tas., 26.ii.1987, P. McQuillan, SAMA 1 21208.

Paratype. ♂, same data as holotype, TADA.

Colour: Head green with yellow reflections. Antennae blue. Pronotum and scutellum green with yellow reflections. Elytra yellow with the following black markings with blue and blue-green reflections: very broad fascia from base to middle reaching margin, enclosing medial elongate yellow spot



FIG. 3. A. *Stigmodera macquillani* sp. nov., B. *S. ashburtonensis* sp. nov., C. *S. mayoiana* sp. nov.(x3)

and one on margin at humeral callus; posteromedial fascia reaching margin, expanded on suture; spade-shaped mark covering apex, marks irregular. Ventral surface green with yellow reflections. Legs: dorsal surface blue-green; ventral surface green. Hairs silver.

Shape and sculpture. Head closely punctured, median sulcus, short muzzle, hairy. Antennae, segments: 1-3 obconic; 4-11 toothed. Pronotum closely punctured, basal fovea extending forwards to middle as impressed line then to apex as glabrous line; basal notches represented by glabrous area on each side more marginal than medial; apical margin projecting medially, basal margin barely bisinuate; laterally parallel-sided at base, rounded to widest anteromedially, rounded and narrowed to apex, hairy. Scutellum scutiform, no punctures, excavate. Elytra costate, scutellary, 3rd, 5th, 7th and 9th intervals raised and smooth, those between flat and wrinkled; laterally slightly angled out from base, rounded at humeral callus, parallel-sided, rounded posteromedially and narrowed to truncate, spineless apex. Ventral surface with shallow punctures, edges of abdominal segments glabrous, long sparse hair. S₇: male truncate medially indented; female unknown.

Size. Males, 12.0 × 5.3 mm (2).

Male genitalia. (Fig 1C). Short. Parameres angled outwards from basal piece, rounded posteromedially, straight, rounded apically, Median lobe with sharp point, sides acutely angled away. Apophysis of basal piece broad, rounded apically.

Remarks. I am unable to group this species with any other. It is the third known species in the genus with hairy head and pronotum, the other two being *S. jubata* Blackburn and *S. rudis* Carter. All occur in montane areas in Tasmania and it is possible that the unusual presence of hair is associated with temperature regulation. Both specimens were collected on the flowers of *Leptospermum rupestre* J. D. Hook. Named after Mr P. McQuillan, Hobart.

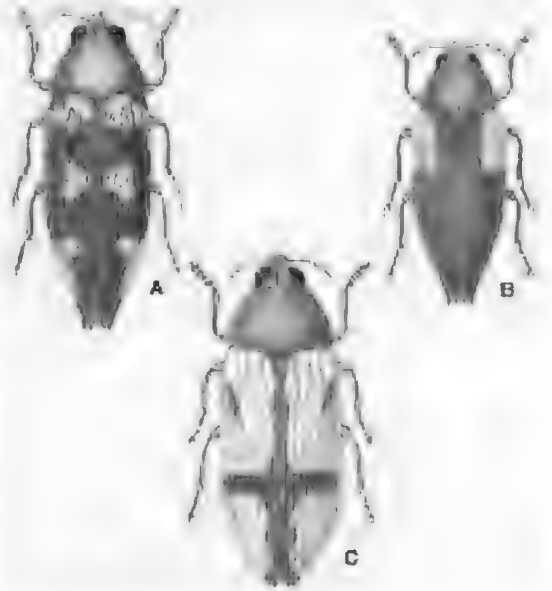


FIG. 4. A. *Stigmodera deliciosa* sp. nov.; B. *S. sedlaceki* sp. nov., C. *S. tepperi* sp. nov.(x3)

***Stigmodera (Castiarina) deliciosa* sp. nov.**
FIGS 1N, 4A

Holotype. ♂, Ourimbah, NSW, 6.xii.1987, R. Mayo, SAMA I 21209.

Allotype. ♀, Mt Glorious, Qld, 26.i.1982, A. Hiller, QMBA.

Paratypes. Qld: 1 ♀, Mt Glorious, 10.i.1984, A. Hiller, AHQA. N.S.W.: 1 ♂, same data as holotype, RMNA; 1 ♂, Ourimbah, 30.xi.1987, R. Mayo, RMNA; 1 ♂, Ourimbah, 29.xi.1987, T. M. S. Hanlon, MHSa; 9 ♂♂, Ourimbah, 30.xi./5.xii.1987, R. de Keyser, A. Sundholm, ASSA.

Colour. Head bronze or purple bronze with green muzzle. Antennae, scutellum green. Pronotum green laterally, bronze or purple bronze medially. Elytra yellow with the following black markings: narrow basal margin; broad anteromedial fascia ends expanded anteriorly and posteriorly enclosing a yellow spot on each side and an elongate yellow mark on margin; posteromedial fascia ends expanded anteriorly and posteriorly enclosing a yellow spot on each side between it and the anteromedial fascia and elongate apical mark enclosing a yellow mark with red margin between itself and posteromedial fascia. Ventral surface green. Legs blue. Hairs silver.

Shape and sculpture. Head shallowly punctured, median sulcus, medium-length muzzle. Antennae, segments: 1-4 obconic, 5-11 toothed. Pronotum shallowly punctured, glabrous, small basal fovea, extending forwards to middle as faint impressed line, basal notches on each side more marginal than medial; apical margin projecting medially, basal margin bisinuate; laterally parallel-sided at base, rounded to widest part anteromedially, rounded and narrowed to apex. Scutellum cordiform, faintly punctured, glabrous, excavate. Elytra costate, 3rd, 5th, 7th and 9th slightly raised, margin flattened, intervals faintly punctured, glabrous; laterally angled out from base, rounded at humeral callus, concave, rounded posteromedially and tapered to bispinose apex; large sharp marginal spine, smaller sharp sutural spine, margin rounded between, apices diverging. Ventral surface shallow punctures, edges of abdominal segments glabrous, sparse medium length hairs, S₇: male truncate; female rounded. Meso-sternal process slightly inflated.

Size. Males, 13.8 ± 0.10 × 4.9 ± 0.04 mm (14). Females, 15.0 × 5.2 mm (2).

Male genitalia. (Fig. 1N). Parameres angled outwards from basal piece, rounded at apex. Median lobe pointed, sides obtusely angled away. Apophysis of basal piece moderately large, narrowed, rounded apically.

Remarks. This species is a member of the *S. producta* Saunders mimicry group. I am unable to place it in any species group on the basis of external morphology and structure of male genitalia. Adults were collected on *Euodia* sp. at Mt Glorious and on *Acmena* sp. at Ourimbah. The name is derived from *deliciosus* L., delightful.

Stigmodera (Castiatina) mayoi sp. nov.
FIGS 1G, 3C

Holotype. ♂, Ourimbah, N.S.W., 20.xii.1987, R. Mayo, SAMA 21210.

Paratypes. N.S.W.: 1 ♂, Ourimbah, 23.xii.1987, A. Sundholm, R. de Keyser, ASSA; 1 ♂, Ourimbah, 26.xii.1987, R. Mayo, RMNA.

Colour. Head green with yellow reflections, muzzle blue-green. Antennae, segments: 1 blue-green, 2-11 green with yellow reflections. Pronotum and scutellum green with yellow reflections. Elytra yellow with the following black markings: basal margin; anteromedial fascia; posteromedial fascia, the above all coalesced on margin enclosing, yellow basal spot, spot on humeral callus, anteromedial spot; mark covering apex and spines, between it and 2nd fascia a yellow spot merging with red mark on margin.

Shape and sculpture. Head shallowly punctured, shallow median sulcus, short muzzle. Antennae, segments: 1-4 obconic; 5-11 toothed. Pronotum shallowly punctured, glabrous, small basal fovea, small basal notches, more marginal than medial; apical margin straight, basal margin bisinuate; laterally angled inwards from base, rounded anteromedially, rounded and narrowed to apex. Scutellum tulipiform, glabrous, excavate. Elytra punctate-striate, 3rd, 5th, 7th and 9th intervals prominent, apical margin flattened, intervals convex and smooth; laterally angled out from base, rounded at humeral callus, concave, rounded posteromedially and tapered to acuminate, bispinose apex; sharp marginal spine, smaller sharp sutural spine, margin rounded between spines, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, short sparse hair. S₇: male truncate, slightly indented medially; female unknown. Mesosternal process inflated. Male: legs 2 and 3, tarsal pads absent tarsomeres 1-3, replaced by median spine, larger on tarsomere 3 than on tarsomeres 1 and 2.

Size. Males, 12.9 × 4.6 mm (3).

Male genitalia. (Fig. 1G). Parameres angled outwards from basal piece, rounded apically. Median lobe with sharp point, sides obtusely angled away. Apophysis of basal piece elongate, medium width, narrowed medially, rounded apically.

Remarks. This species is a member of the *S. producta* Saunders mimicry group. I am unable to group it with any other species on the basis of ex-

ternal morphology and structure of the male genitalia. Named after Mr R. Mayo, Narara.

Stigmodera (Castiarina) murchisonensis sp. nov.
FIGS 1D, 2A

Holotype: ♂, 56 km N Murchison R., W.A., 23.xii.1986, M. Powell, WAMA.

Allotype: ♀, same data as holotype, SAMA I 21211.

Colour: Head, antennae, pronotum bronze. Scutellum black. Elytra yellow with following black markings: narrow basal margin; anteromedial fascia, ends expanded anteriorly, not reaching margin, and posteriorly reaching margin; posteromedial fascia reaching margin, projecting anteriorly from middle of each elytron; apical mark, last three marks connected along suture. Ventral surface and legs bronze. Hairs silver.

Shape and sculpture: Head closely punctured, median sulcus, very short muzzle. Antennae compressed, segments: 1-3 obconic; 4-11 toothed. Pronotum closely punctured, basal fovea extending to middle as glabrous impressed line, then to apical margin as impressed line, basal notches represented by glabrous area on each side more marginal than medial; apical margin straight, basal margin bisinuate; laterally parallel-sided at base, rounded to widest part medially, rounded to apex. Scutellum scutiform. Elytra punctate-striate, intervals convex, punctured; laterally angled out from base, rounded at humeral callus, concave, rounded posteromedially and narrowed to bispinose apex; sharp marginal spine, small sharp sutural spine, margin rounded and indented between, apices diverging, apical margin sub serrate. Ventral surface with shallow punctures, edges of abdominal segments glabrous, hairy, hairs short, S₇: truncate both sexes.

Size: Male, 11.3 × 4.1 mm (1). Female, 12.1 × 4.5 mm (1).

Male genitalia: (Fig. 1D) Short. Parameres parallel-sided basally, widened, rounded anteromedially, parallel-sided, rounded to apex. Median lobe blunt, sides acutely rounded away. Apophysis of basal piece moderately wide, rounded apically.

Remarks: Member of the *S. cupricauda* Saunders species group. Most resembles *S. chinnoeki* Barker but male genitalia are more like those of *S. cupricauda* (Barker 1983). However *S. chinnoeki* has denser punctuations on the head and pronotum, the elytral intervals are flatter and it has a

southern distribution in W.A. and S. Aust. The name is derived from the type locality.

Stigmodera (Castiarina) setlacecki sp. nov.
FIGS 1G, 4B

Holotype: ♂, Mt Kaindi, New Guinea, 2350 m, 24.i.1979, J. Sedlacek, SAMA I 21212.

Colour: Head, antennae, pronotum and scutellum; dark blue. Elytra very dark blue with an elongate red mark on each elytron from base to anteromedial area over the humeral callus and along the margin, not reaching suture. Ventral surface and legs dark blue. Hairs silver.

Shape and sculpture: Head closely punctured, median sulcus, short muzzle. Antennae, segments: 1-4 obconic; 5-11 toothed. Pronotum closely punctured, basal fovea extending forwards to middle as glabrous line, basal notches represented by glabrous area on each side more marginal than medial; apical margin broadly projecting medially, basal margin bisinuate; laterally angled inwards from base, rounded to widest anteromedially, rounded and narrowed to apex. Scutellum cordiform, few punctures, glabrous, excavate. Elytra punctate-striate, intervals convex, smooth; laterally angled out from base, rounded at humeral callus, concave, rounded posteromedially and narrowed to bispinose apex; sharp marginal spine, small, sharp sutural spine, margin rounded and indented between, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, short sparse hair. S₇: male truncate; female unknown. Mesosternal process slightly inflated.

Size. Male, 11.0 × 4.1 mm (1).

Male genitalia. (Fig. 1G). Parameres parallel-sided basally, rounded anteromedially, parallel-sided, rounded apically. Median lobe sharp, sides acutely angled away. Apophysis of basal piece medium width, narrowed, rounded apically.

Remarks. I am unable to group this with any other species on the basis of external morphology or structure of male genitalia. Superficially this resembles *S. borealis* Barker which is a similar colour and also has red elytral markings. However, *S. borealis* is a much smaller species and the elytral apices are markedly serrate whereas they are smooth in *S. setlacecki*. Named after the collector Mr J. Sedlacek, Brookfield.

Stigmodera (Castiarina) lepperi sp. nov.
FIGS 11, 4C

Holotype. ♂, Ardrossan, S. Aust., J. G. O. Tepper, SAMA 1 21213.

Allotype. ♀, same data as holotype; SAMA 1 21214.

Paratypes. S. Aust.: 2 ♂♂, 3 ♀♀, same data as holotype, SAMA; 1 ♂, Eyre's Pen., SAMA; 1 ♀, Hincks N.P., Eyre Pen., 7.x.1979, D. V. Lucis, SAMA; 1 ♀, Addison Park, Eyre Pen., 11.x.1981, J. & D. Gardner, SAMA; 1 ♀, Wharminda Soaks, Eyre Pen., 13.xi.1987, G. G. Burns, GBVA.

Colour. Head bronze-green. Antennae, segments: 1-2 blue-green; 3-11 bronze-green. Pronotum and scutellum bronze green. Elytra yellow with the following blue-green markings; narrow basal margin; short vitta over each humeral callus; narrow post-medial fascia not reaching margin; diamond-shaped pre-apical mark often reduced, all marks connected along suture. Ventral surface: sternum bronze-green; abdomen testaceous. Legs bronze-green. Hairs silver.

Shape and sculpture. Head closely punctured, short muzzle. Antennae, segments: 1-3 obconic; 4-11 toothed. Pronotum closely punctured, basal fovea extending forwards to middle as glabrous line, small basal notches on each side more marginal than medial; apical margin projecting medially, basal margin barely bisinuate; laterally rounded from base, widest postero-medially, rounded and narrowed to apex. Scutellum scutiform, glabrous, flat. Elytra punctate-striate, intervals convex; laterally angled out from base, rounded at humeral callus, concave, rounded postero-medially then tapered to bispinose apex; both spines small and blunt, margin straight and indented between, apices diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, moderately hairy, hairs short. S₇: male truncate; female rounded.

Size. Males, 15.8 ± 0.48 × 6.0 ± 0.13 mm (5). Females, 15.2 ± 0.37 × 5.9 ± 0.22 mm (6).

Male genitalia. (Fig. 11.) Parameres parallel-sided from basal piece, rounded postero-medially, rounded and tapered, rounded to apex. Median lobe sharp, sides obtusely angled away. Apophysis of basal piece short, narrowed medially, rounded apically.

Remarks. This species is a member of the *S. straminea* Saunders species group on the basis of

its external morphology, structure of the male genitalia and testaceous abdomen. It most resembles *S. burnsi* Barker. However the head, pronotum and sternum are bronze-green whereas they are bright green in *S. burnsi*. The elytral markings are blue-green in *S. lepperi* and blue in *S. burnsi* and the male genitalia are a different shape and smaller in *S. lepperi*, despite individuals being the same size as *S. burnsi* (Fig. 1M). *S. lepperi* has been collected from the Yorke and Eyre Peninsulas, S. Aust., while *S. burnsi* has been collected on the Adelaide Plains, Murray Mallee and Victorian mallee districts. Named after the late Mr J. G. O. Tepper.

Stigmodera (Castiarina) watkinsi sp. nov.
FIGS 1E, 2C

Holotype. ♂, Mt York, Blue Mts, N.S.W., 15.xii.1987, S. Watkins, SAMA 1 21215.

Allotype. ♀, same data as holotype, SAMA 1 21216.

Paratypes. N.S.W.: 1 ♂, 1 ♀; Blue Mts, G. Masters, SAMA; 1 ♂, 1 ♀, Medlow, H. J. Carter, SAMA; 5 ♂♂, 4 ♀♀, same data as holotype, SWNA; 8 ♂♂, 8 ♀♀, Mt York, 21/25.xii.1985, 12.i.1986, 13/21.xii.1987, S. Watkins, SWNA; 17 ♂♂, 11 ♀♀, Mt Boyce, Blue Mts, 27.xii.1985, 13/15/17.xii.1987, S. Watkins, SWNA; 4 ♂♂, 3 ♀♀, Macquarie Pass, Mt Murray Rd, Blue Mts, 21.1.1986, S. Watkins, SWNA; 6 ♂♂, 2 ♀♀, Leura, 23.xii.1985, 28.xii.1987, S. Watkins, SWNA; 2 ♂♂, Wentworth Falls, 25.xii.1985, S. Watkins, SWNA; 1 ♂, Bald Knob Rd, Dundee, 19.xii.1987, S. Watkins, SWNA; 1 ♂, 1 ♀, 13 km SW Ebor, S. Watkins, SWNA; 1 ♂, 2 ♀♀, Coss Rd, State Forest, 20.xii.1987, S. Watkins, SWNA; 4 ♂♂, 1 ♀, Hartley Vale, 15.xii.1987, S. Watkins, SWNA; 2 ♂♂, 4 ♀♀, 14-16 km NE Deepwater, 20.xii.1987, G. Williams, GWNA.

Colour. Head and antennae blue-green with yellow reflections or blue. Pronotum blue-green or blue medially, orange laterally except neck collar and base. Scutellum blue-green with yellow reflections or blue. Elytra orange, with following markings either green with yellow reflections or blue with purple reflections: very broad basal fascia; postero-medial fascia reaching margin, expanded anteriorly on anterior margin at suture and posteriorly on posterior margin at suture; spade-shaped apical mark, all marks connected along suture. Ventral surface and legs green with yellow reflections or green-blue. Hairs silver.

Shape and sculpture: Head closely punctured, median sulcus, short muzzle. Antennae, segments: 1-3 obconic; 4-11 toothed. Pronotum closely punctured, basal fovea extending forwards to apical margin as impressed line; apical margin projecting medially, basal margin barely bisinuate; laterally parallel-sided at base, rounded to widest part medially, rounded to apex. Scutellum scutiform, punctured, flat. Elytra punctate-striate, intervals convex, punctured; laterally angled out from base, rounded at humeral callus, concave, rounded posteromedially and narrowed to rounded, spineless apex; apices hardly diverging. Ventral surface with shallow punctures, edges of abdominal segments glabrous, moderately hairy, hairs short. S₇: male truncate; female rounded.

Size: Males, 10.2 ± 0.10 mm × 3.9 ± 0.04 mm (54). Females, 10.8 ± 0.12 × 4.2 ± 0.05 mm (39).

Male genitalia: (Fig. 1E). Short. Parameres widened basally, rounded medially, narrowed, rounded apically. Median lobe sharp, sides acutely angled away. Apophysis of basal piece medium width, tapered, rounded apically.

Remarks: Member of *S. distinguenda* Saunders species group. Carter (1929) apparently confused this species with *S. grata* Saunders, as he listed *S. grata* occurring in Qld, N.S.W., Vic., and S. Aust. *S. grata* is red on the dorsal surface with blue markings and occurs only on Fleurieu Peninsula and on Kangaroo Island, S. Aust. It is a larger species and its male genitalia are distinct from those of this species (Barker 1983). The elytral colour and pattern are distinct from all other members in this species group (Barker 1986). Named after Mr S. Watkins, Caparra.

Stigmodera (Castiarina) williamsi sp. nov.
FIGS 1F, 2D

Holotype. ♂, Wingham, NSW, 3.xii.1987, G. Williams, SAMA I 21217

Allotype. ♀, same data as holotype, SAMA I 21218.

Paratypes. N.S.W.: 2 ♂♂, 2 ♀♀, Wingham, 3-5.xii.1987, G. Williams, GWNA.

Colour. Head; apex yellow-green; base coppery. Antennae yellow green. Pronotum and scutellum coppery. Elytra pale yellow with the following black markings with green reflections: narrow basal margin; curved mark over each humeral callus connected to basal margin; anteromedial fascia represented by diamond-shaped mark on suture and a medial mark on each side and one on margin

variably absent in some specimens; posteromedial fascia reaching margin, projecting anteriorly on suture and on anterior margin closer to lateral margin than suture; mark covering apex, all marks connected along suture. Hairs silver.

Shape and sculpture. Head closely punctured, broad median sulcus, short muzzle. Antennae, segments: 1-4 obconic; 5-11 toothed. Pronotum closely punctured, basal fovea; apical margin straight, basal margin bisinuate; laterally parallel-sided at base, rounded to widest part medially, rounded to apex. Scutellum scutiform, few punctures, glabrous, excavate. Elytra punctate-striate, intervals convex, smooth; laterally angled out from base, rounded at humeral callus, concave, rounded posteromedially and narrowed to bispinose apex; sharp marginal spine, minute sutural spine, margin rounded and indented between, apices hardly diverging. Ventral surface shallowly punctured, edges of abdominal segments glabrous, sparse very short hairs. S₇: truncate in both sexes.

Size. Males, 6.6 × 2.3 mm (3). Females, 6.8 × 2.4 mm (3).

Male genitalia. (Fig. 1F) Short. Parameres widened basally, rounded anteromedially then narrowed, widened pre-apically, rounded apically. Median lobe pointed. Apophysis of basal piece wide, rounded apically.

Remarks. The male genitalia of this species most closely resemble those of *S. selboldi* C. & G. Barker (1983) Fig. 1K. Both species belong in the *S. crenata* (Don.) species group. *S. sieboldi*, Barker (1983) Fig. 4F, has bicolourous pronotum, blue medially and green laterally. It has orange-red elytra with black pre- and post-medial fascia and pre-apical mark, is a larger species and occurs only in southern W.A. Named after Mr G. Williams, Lansdowne.

Distribution of *S. puteolata* Carter

I have examined a single male specimen of *S. puteolata* Carter, collected by Mr E. E. Adams on *Eremophila bignoniiflora* (Benth.) F. Muell. near the junction of the Dawson and MacKenzie Rivers, central Queensland. There is a single specimen of the same species in the S.A. Museum, collected at Ooldea, S. Aust. These records represent a considerable range extension as the species was previously known from the eastern goldfields district, W.A.

Erratum

Barker (1987) p. 136. Holotype of *Stigmodera (Castiarina) dugganensis* Barker SAMA shot (read No I 2118) not I 21178

Acknowledgments

I thank the following for assistance: Dr G. E. Gross and Dr E. G. Matthews, South Australian Museum; Dr D. S. Horning, Macleay Museum, Sydney; Dr A. Neboiss, National Museum of Victoria; Dr R. Chinnock, S.A. Herbarium, Adelaide; Mr K. T. Richards, Department of Agriculture, South Perth; Mr P. McQuillan, Department of Agriculture, Hobart; Mr T. Weir, A.N.I.C.; Miss

C.M.F. von Hayek, British Museum, (N.H.); Dr T. F. Houston, Western Australian Museum; Mr E. F. Adams, Edungalba; Mr G. G. Burns, Mornington; Mr H. Demarz, Quinns Rocks; Mr T. M. S. Hanlon, Ryde; Mr A. Hiller, Mt Glorious; Mr R. Mayo, Narara; Mr M. Powell, Attadale; Mr A. Sundholm, Elizabeth Bay; Mr S. Watkins, Caparra; Mr G. Williams, Lansdowne; Miss H. Vanderwoude, Dr J. Gardner and Mr P. Kempster Department of Zoology, University of Adelaide.

References

- BARKER, S. (1979) New species and a catalogue of *Stigmodera* (*Castiarina*) (Coleoptera: Buprestidae). *Trans R. Soc. S. Aust.* **103**, 1-23.
- , (1983) New synonyms and new species of *Stigmodera* (*Castiarina*) (Coleoptera: Buprestidae). *Ibid.* **107**, 139-169.
- , (1986) *Stigmodera* (*Castiarina*) (Coleoptera: Buprestidae): taxonomy, new species and a checklist. *Ibid.* **110**, 1-36.
- , (1987) Eighteen new species of *Stigmodera* (*Castiarina*) (Coleoptera: Buprestidae). *Ibid.* **111**, 133-146.
- BLACKBURN, T. (1890) Scientific Results of the Elder Exploring Expedition. Coleoptera. *Ibid.* **26**, 16-61.
- , (1892) Further notes on Australian Coleoptera. *Ibid.* **15**, 207-291.
- CARTER, H. J. (1916) Revision of the genus *Stigmodera*, and descriptions of some new species of Buprestidae (Order Coleoptera). *Ibid.* **40**, 78-144.
- (1929) A check list of the Australian Buprestidae, with tables and keys to subfamilies, tribes, and genera, by Andre Théry, correspondant de Muséum de Paris; and figures (Pls xxxi to xxxiii) drawn by Cedric Deane, A.M.I.E. (Aust.). *Aust. Zool.* **5**, 265-304.
- DEUQUET, C. M. (1956) Notes on Australian Buprestidae, with descriptions of three new species and two subspecies of the genus *Stigmodera*, subgenus *Castiarina*. *Proc. Linn. Soc. N.S.W.* **81**, 153-156.
- KERREMANS, C. (1903) 'Genera Insectorum, Coleoptera; Serricornia, Fam. Buprestidae' Fasc. 12c p. 207. (Verteneuit & Desmet, Bruxelles).
- MOORE, B. P. (1987) A guide to the Beetles of South-Eastern Australia (Australian Entomological Press, Greenwich, N.S.W.).
- WATT, J. C. (1979) Abbreviations for entomological collections. *N.Z. Zool.* **6**, 5-9-520.